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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/018,634	06/03/2002	Christa Schonefeld	SCHONEFELD	5171
20151	7590	03/07/2005	EXAMINER	
HENRY M FEIEREISEN, LLC 350 FIFTH AVENUE SUITE 4714 NEW YORK, NY 10118			LISH, PETER J	
			ART UNIT	PAPER NUMBER
			1754	

DATE MAILED: 03/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/018,634

Applicant(s)

SCHONEFELD ET AL.

Examiner

Peter J Lish

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 June 2002.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-12 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☒ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 6/3/02, 2/19/02.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term “adamantine” is defined as “resembling the diamond in hardness or luster”. The claiming of an adamantine carbon structure is thus indefinite, as it is unclear as to which carbon structures meet this limitation and which do not. It is suggested that the carbon material being claimed by the applicant be more clearly defined.

Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are generally indefinite, they appear to be a literal translation into English from a foreign document and are unclear as to the exact process that they claim. Rewording the claims to more clearly describe the process of the application is suggested.

Claims 9-12 provides for the use of adamantine carbon, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 9-12 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for

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example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4 and 6-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Gruen et al. (US 6,592,839).

Gruen et al. teaches a process for the production of a plasma-deposited nanocrystalline diamond film. The method comprises subjecting a carbon source, such as hydrocarbons or fullerenes, to a plasma created primarily from hydrogen and an inert gas. The resulting film is characterized by having a cubic diamond structure. The diamond film has a crystal size of between 3 nanometers and 10 microns, which is controlled by varying the ratio of hydrogen and inert gases. The larger microcrystallite grain structure, which is formed under plasmas containing high amounts of hydrogen, represents clusters of diamond particles. The smaller nanocrystalline grain structure, which is formed under plasmas containing high amounts of inert, represent diamond particles and single crystals of 10 to 20 nm. No difference is seen between

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either the process or the diamond products of Gruen et al. and those of the instantly claimed invention.

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsumoto et al. (US 4,767,608).

Matsumoto et al. teaches a process for the synthesis of diamond structures. The process comprises providing a plasma using inert gases, hydrogen, hydrocarbons, or mixtures thereof as the plasma-generating gas. A carbon donor, such as organic carbon in gaseous, liquid, or solid form is decomposed in the plasma and is thus altered to form cubic diamond phase carbon, which is precipitated as a film or powder onto a substrate. No difference is seen between the process of Matsumoto et al. and that of the instantly claimed invention.

Claims 1-4 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Frenklach et al. (US 5,087,434).

Frenklach et al. teaches a process for the synthesis of diamond particles with controlled size, purity, and crystal structure. The process comprises providing a plasma using inert gases, hydrogen, oxygen, or mixtures thereof as the plasma-generating gas. A carbon gas, such as a hydrocarbon, is decomposed in the plasma and is thus altered to form cubic diamond seeds with crystal sizes of generally less than 50 nm. The particles may then be grown by depositing diamond phase carbon to produce particles ranging from the size of the seeds to above one micron. The purity of the cubic diamond phase may be controlled to be very high. No

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difference is seen between either the process or the diamond products of Frenklach et al. and those of the instantly claimed invention.

***Claim Rejections - 35 USC § 102/103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Gruen et al.

Gruen et al. is applied above. It is not explicitly taught that the diamond film produced by Gruen et al. comprises cubic diamond phase of greater than 99%. However, because Gruen et al. teaches that the structures formed are of cubic diamond phase (as shown by the diffraction peaks of Fig. 3), and because no difference is seen between the process or products of Gruen et al. and that of the instantly claimed invention, it is expected that the film of Gruen et al. comprises cubic diamond phase of greater than 99%.

Where, as here, the reference discloses all the limitations of a claim except a property or function, and the examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention, the burden of proof is shifted to the applicant, as in *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980).

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Claims 5-8 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Matsumoto et al.

Matsumoto et al. is applied above. It is not explicitly taught that the diamond structures produced by Matsumoto et al. comprises cubic diamond phase of greater than 99%. Neither is it taught that the diamond powders have crystallite sizes or cluster sizes within the claimed ranges. However, because no difference is seen between the process of Matsumoto et al. and that of the instantly claimed invention, it is expected that the products of Matsumoto et al. comprises cubic diamond phase structures of the claimed purity and sizes.

Where, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the burden of proof is shifted to the applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. See *In re Best*, 195 USPQ 430.

Claim 5 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Frenklach et al.

Frenklach et al. is applied above. It is not explicitly taught that the diamond particles produced by Frenklach et al. comprises cubic diamond phase of greater than 99%. However, because Frenklach et al. teaches that the structures formed are of high purity cubic diamond phase, see example 1, and because no difference is seen between the process or products of Frenklach et al. and that of the instantly claimed invention, it is expected that the particles of Frenklach et al. comprises cubic diamond phase of greater than 99%.

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Where, as here, the reference discloses all the limitations of a claim except a property or function, and the examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention, the burden of proof is shifted to the applicant, as in *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980).

### *Conclusion*

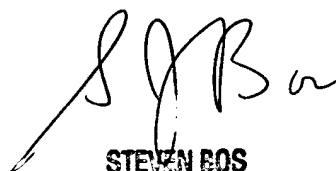
Foreign priority reference, Germany 199 27 893.8 (6/18/99), has not been received by the USPTO.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Lish whose telephone number is 571-272-1354. The examiner can normally be reached on 9:00-6:00 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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